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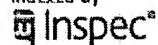
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John Colter, Netscape Navigator

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### 1 [Analysis of lexical signatures for improving information persistence on the World Wide Web](#)



Seung-Taek Park, David M. Pennock, C. Lee Giles, Robert Krovetz

 October 2004 **ACM Transactions on Information Systems (TOIS)**, Volume 22 Issue 4

Publisher: ACM Press

Full text available: pdf(808.10 KB)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index](#)

A <i>lexical signature</i> (LS) consisting of several key words from a Web document is often s for finding the document later, even if its URL has changed. We conduct a large-scale empirical methods for generating lexical signatures, including Phelps and Wilensky's original proposal (PW static variations, and one new dynamic method. We examine their performance on the Web over and on a TREC data set, evaluating t ...

**Keywords:** Broken URLs, TREC, World Wide Web, dead links, digital libraries, indexing, informa inverse document frequency, lexical signatures, robust hyperlinks, search engines, term frequen

### 2 [Implementing ranking strategies using text signatures](#)



W. Bruce Croft, Pasquale Savino

 January 1988 **ACM Transactions on Information Systems (TOIS)**, Volume 6 Issue 1

Publisher: ACM Press

Full text available: pdf(1.59 MB)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index](#)

Signature files provide an efficient access method for text in documents, but retrieval is usually l documents that contain a specified Boolean pattern of words. Effective retrieval requires that do meanings be found through a process of plausible inference. The simplest way of implementing i is to rank documents in order of their probability of relevance. In this paper techniques are desc implementing probabilistic ranking ...

### 3 [Using syntactic analysis in a document retrieval system that uses signature files](#)



R. Sacks-Davis, P. Wallis, R. Wilkinson

 December 1989 **Proceedings of the 13th annual international ACM SIGIR conference on Res development in information retrieval SIGIR '90**

Publisher: ACM Press

Full text available: pdf(1.15 MB)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index](#)

Our work involves the study of the extent to which natural language processing techniques aid tl indexing and retrieval of documents. In this paper we describe the use of signature files in large systems. We show that good performance can be obtained without requiring the significant over

the inverted file technique. We examine the use of syntactic analysis of the text in all stages of r that an initial Boolean query should be pe ...

#### 4 Principal signatures for higher-order program modules



Mads Tofte

February 1992 **Proceedings of the 19th ACM SIGPLAN-SIGACT symposium on Principles of languages POPL '92**

**Publisher:** ACM Press

Full text available: pdf(1.02 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index](#)

Under the Damas-Milner type discipline for functional languages, every expression has principal at all. In the type discipline for ML Modules, a signature expression has a principal signature, if it However, while functions can be higher-order in ML, parameterised modules in ML are first-order type discipline for a skeletal higher-order module language which has principal signatures. Shari views of structures are ha ...

#### 5 Information retrieval: Classifying texts using relevancy signatures

Ellen Riloff, Wendy Lehnert

February 1992 **Proceedings of the workshop on Speech and Natural Language HLT '91**

**Publisher:** Association for Computational Linguistics

Full text available: pdf(564.45 KB)

Additional Information: [full citation](#), [abstract](#), [references](#)

Text processing for complex domains such as terrorism is complicated by the difficulty of being a distinguish relevant and irrelevant texts. We have discovered a simple and effective filter, the *Re Algorithm*, and demonstrated its performance in the domain of terrorist event descriptions. The I Signatures Algorithm is based on the natural language processing technique of selective concept relies on text representations that reflect p ...

#### 6 Significance of Gene Ranking for Classification of Microarray Samples

Chaolin Zhang, Xuesong Lu, Xuegong Zhang

July 2006 **IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB)**

**Publisher:** IEEE Computer Society Press

Full text available: pdf(1.82 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Many methods for classification and gene selection with microarray data have been developed. T usually give a ranking of genes. Evaluating the statistical significance of the gene ranking is imp understanding the results and for further biological investigations, but this question has not been machine learning methods in existing works. Here, we address this problem by formulating it in hypothesis testing and propose a solution based on r ...

**Keywords:** Significance of gene ranking, gene selection, classification, microarray data analysis

#### 7 Information retrieval session 8: efficiency: Online duplicate document detection: signature i dynamic retrieval environment



Jack G. Conrad, Xi S. Guo, Cindy P. Schriber

November 2003 **Proceedings of the twelfth international conference on Information and kn management CIKM '03**

**Publisher:** ACM Press

Full text available: pdf(215.37 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index](#)

As online document collections continue to expand, both on the Web and in proprietary environn duplicate detection becomes more critical. Few users wish to retrieve search results consisting o documents, whether identical duplicates or close matches. Our goal in this work is to investigate and determine one or more approaches that minimize its impact on search results. Recent work using some form of signature to characterize a do ...

**Keywords:** data management, doc signatures, duplicate document detection

8 Intrusion detection: Enhancing byte-level network intrusion detection signatures with conte



Robin Sommer, Vern Paxson

October 2003 **Proceedings of the 10th ACM conference on Computer and communications s**

**Publisher:** ACM Press

Full text available: pdf(217.88 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index](#)

Many network intrusion detection systems (NIDS) use byte sequences as signatures to detect m  
While being highly efficient, they tend to suffer from a high false-positive rate. We develop the c  
*signatures* as an improvement of string-based signature-matching. Rather than matching fixed s  
we augment the matching process with additional context. When designing an efficient signature  
NIDS bro, we provide low-level context ...

**Keywords:** bro, evaluation, network intrusion detection, pattern matching, security, signatures,

9 On the fly signatures based on factoring



Guillaume Poupard, Jacques Stern

November 1999 **Proceedings of the 6th ACM conference on Computer and communications :**

**Publisher:** ACM Press

Full text available: pdf(786.71 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index](#)

In response to the current need for fast, secure and cheap public-key cryptography largely induc  
development of electronic commerce, we propose a new on the fly signature scheme, i.e. a sche  
very small on-line work for the signer It combines provable security based on the factorization p  
and secret keys, short transmission and minimal on-line computation. It is the first RSA-like sigr  
can be used for both ef ...

10 A fast signature simulation tool for built-in self-testing circuits



S. B. Tan, K. Totton, K. Baker, P. Varma, R. Porter

October 1987 **Proceedings of the 24th ACM/IEEE conference on Design automation DAC '87**

**Publisher:** ACM Press

Full text available: pdf(896.99 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index](#)

This paper describes a Fast Signature Simulator (FSS) tool for Built-In Self-Testing (BIST) circuit  
of a simulator generator and a compiled code simulator. The simulator generator comprises a co  
called the EXECUTIVE and translation software called SIM-GEN. SIM-GEN accepts a Hardware De  
(HDL) representation of the circuit-under-test as its input and produces C code simulation modu  
Boolean relations that represent the structu ...

11 Signature functions for algebraic numbers



Michael B. Monagan, Gaston H. Gonnet

August 1994 **Proceedings of the international symposium on Symbolic and algebraic comp**

**Publisher:** ACM Press

Full text available: pdf(669.84 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index](#)

In 1980 Schwartz gave a fast probabilistic method which tests if a matrix of polynomials over  $\mathbb{Z}$   
The method is based on the idea of signature functions which are mappings of mathematical exp  
rings. In Schwartz's paper, they were polynomials over  $\mathbb{Z}$  into  $\text{GF}(p)$ . Because computation in  $\text{GF}$   
compared with computing with polynomials, Schwartz's method yields an enormous speedup ...

12 Selected writings on computing: a personal perspective

Edsger W. Dijkstra

January 1982 Book

**Publisher:** Springer-Verlag New York, Inc.

Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Since the summer of 1973, when I became a Burroughs Research Fellow, my life has been very it had been before. The daily routine changed: instead of going to the University each day, wher most of my time in the company of others, I now went there only one day a week and was most when not travelling!-- alone in my study. In my solitude, mail and the written word in general be more important. The circumstance that my employe ...

### 13 Signature simulation and certain cryptographic codes



Carl Hammer

January 1971 **Communications of the ACM**, Volume 14 Issue 1

**Publisher:** ACM Press

Full text available: [pdf\(1.51 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#)

Three cyphers allegedly authored by Thomas Jefferson Beale in 1822 have been the subject of ir over 100 years. Generations of cryptanalysts have expended untold man-years, thus far without to decode them; vast armies of fortune hunters and treasure seekers have devoted Herculean la the rolling hills of Virginia trying to locate the promised bonanza. The history of pertinent activiti volumes, yet serious students of cryptogr ...

**Keywords:** Declaration of Independence, Magna Carta, Thomas Jefferson Beale, codes, cryptan decoding, encoding, pseudotext, signature, simulation

### 14 Structural digital signature for image authentication: an incidental distortion resistant schen



Chun-Shien Lu, Hong-Yuan Mark Liao

November 2000 **Proceedings of the 2000 ACM workshops on Multimedia MULTIMEDIA '00**

**Publisher:** ACM Press

Full text available: [pdf\(684.69 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index](#)

The existing digital data authentication methods are able to detect tampered regions, but are to incidental distortions. This paper will present a new digital signature scheme for image authentic of image content (in the wavelet domain). Based on this concept, a structural digital signature (: SDS is a signature that can be used to judge whether an incoming modification is incidental or n structure of an ...

**Keywords:** authentication, digital signature, fragility, robustness, wavelet transform

### 15 String barcoding: uncovering optimal virus signatures



Sam Rash, Dan Gusfield

April 2002 **Proceedings of the sixth annual international conference on Computational b '02**

**Publisher:** ACM Press

Full text available: [pdf\(3.98 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index](#)

There are many critical situations when one needs to rapidly identify an unidentified pathogen fr set of previously sequenced pathogens. DNA or RNA hybridization chips can be designed for sucl Each cell in the chip can report the presence or absence of a specific substring of DNA in the uni Properly designed, the collection of reports obtained from the cells can uniquely identify any patl determine that the unidentified patho ...

**Keywords:** barcoding, string barcoding, suffix trees, testing set, virus signatures

16 A method for obtaining digital signatures and public-key cryptosystems



R. L. Rivest, A. Shamir, L. Adleman

February 1978 **Communications of the ACM**, Volume 21 Issue 2

**Publisher:** ACM Press

Full text available: pdf(748.63 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index](#)

An encryption method is presented with the novel property that publicly revealing an encryption thereby reveal the corresponding decryption key. This has two important consequences: (1) Communications means are not needed to transmit keys, since a message can be enciphered using an encryption revealed by the intended recipient. Only he can decipher the message, since only he knows the decryption key. (2) A message can be "signed" ...

**Keywords:** authentication, cryptography, digital signatures, electronic funds transfer, electronic message-passing, prime number, privacy, public-key cryptosystems, security

17 Signature extraction for overlap detection in documents

Raphael A. Finkel, Arkady Zaslavsky, Krisztián Monostori, Heinz Schmidt

January 2002 **Australian Computer Science Communications , Proceedings of the twenty-first conference on Computer science - Volume 4 ACSC '02**, Volume 24 Issue 1

**Publisher:** Australian Computer Society, Inc., IEEE Computer Society Press

Full text available: pdf(715.78 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index](#)

Easy access to the Web has led to increased potential for students cheating on assignments by copying work. By the same token, Web-based tools offer the potential for instructors to check submitted signs of plagiarism. Overlap-detection tools are easy to use and accurate in plagiarism detection and an excellent deterrent to plagiarism. Documents can overlap for other reasons, too: Old documents and authors summarize previous work identical ...

**Keywords:** plagiarism document overlap culling digest

18 A theory of using history for equational systems with applications



Rakesh M. Verma

September 1995 **Journal of the ACM (JACM)**, Volume 42 Issue 5

**Publisher:** ACM Press

Full text available: pdf(2.70 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Implementation of programming language interpreters, proving theorem of the form  $A=B$ , implementing abstract data types, and program optimization are all problems that can be reduced to the problem of finding a normal form for an expression with respect to a finite set of equations. In 1980, Chew proposed congruence closure based simplifier (CCNS) for computing with regular systems, which stores the computations in a compact data structure. In 1990, Verma and Ra ...

**Keywords:** congruence-closure algorithm, equational logic, proof theory, rewrite system transformation, rewrite systems

19 Challenges facing researchers using multimedia data: tools for layering significance



Ricki Goldman-Segall

February 1994 **ACM SIGGRAPH Computer Graphics**, Volume 28 Issue 1

**Publisher:** ACM Press

Full text available: pdf(547.62 KB)

Additional Information: [full citation](#), [abstract](#), [index terms](#)

Two distinct communities of visual media users have begun to influence each other over the last decade: those who use media as forms of art and entertainment, and those, from a variety of knowledge domains, who use media forms as tools to explain, illustrate or communicate. From the entertainment and cinematographic media to the scientific and technical media, the two communities are beginning to interact.



grammar has evolved which describes a range of identifiable genres and basic structures --- which her research team at MIT refer to as primitives (1991). ...

20 ODR: Information retrieval 2: Essential deduplication functions for transactional databases



Jack G. Conrad, Edward L. Raymond

June 2007

**Proceedings of the 11th international conference on Artificial intelligence and**

**Publisher:** ACM Press

Full text available: pdf(433.42 KB)

, Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

As massive document repositories and knowledge management systems continue to expand, in environments as well as on the Web, the need for duplicate detection becomes increasingly important. Enterprises such as law firms, effective retrieval applications depend upon such functionality. To users are not interested in search results containing numerous sets of duplicate documents, whether duplicates or near variants.

This report addresses ...

**Keywords:** data management, document signatures, duplicate detection

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1 [Computing curricula 2001](#)



September 2001 **Journal on Educational Resources in Computing (JERIC)**

**Publisher:** ACM Press

Full text available: [pdf\(613.63 KB\)](#)

[html\(2.78 KB\)](#)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

2 [IS '97: model curriculum and guidelines for undergraduate degree programs in information systems](#)



Gordon B. Davis, John T. Gorgone, J. Daniel Couger, David L. Feinstein, Herbert E. Longenecker

December 1996 **ACM SIGMIS Database, Guidelines for undergraduate degree programs on Model curriculum and guidelines for undergraduate degree programs in information systems IS '97**, Volume 28 Issue 1

**Publisher:** ACM Press

Full text available: [pdf\(7.24 MB\)](#)

Additional Information: [full citation](#), [citations](#)

3 [Bioinformatics—an introduction for computer scientists](#)



Jacques Cohen

June 2004 **ACM Computing Surveys (CSUR)**, Volume 36 Issue 2

**Publisher:** ACM Press

Full text available: [pdf\(261.56 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The article aims to introduce computer scientists to the new field of bioinformatics. This area has arisen from the needs of biologists to utilize and help interpret the vast amounts of data that are constantly being gathered in genomic research---and its more recent counterparts, proteomics and functional genomics. The ultimate goal of bioinformatics is to develop in silico models that will complement in vitro and in vivo biological experiments. The article provides a bird's eye view of the ...

**Keywords:** DNA, Molecular cell biology, RNA and protein structure, alignments, cell simulation and modeling, computer, dynamic programming, hidden-Markov-models, microarray, parsing biological sequences, phylogenetic trees

#### 4 Metaheuristics in combinatorial optimization: Overview and conceptual comparison



Christian Blum, Andrea Roli

September 2003 **ACM Computing Surveys (CSUR)**, Volume 35 Issue 3

**Publisher:** ACM Press

Full text available: pdf(431.84 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The field of metaheuristics for the application to combinatorial optimization problems is a rapidly growing field of research. This is due to the importance of combinatorial optimization problems for the scientific as well as the industrial world. We give a survey of the nowadays most important metaheuristics from a conceptual point of view. We outline the different components and concepts that are used in the different metaheuristics in order to analyze their similarities and differences. Two v ...

**Keywords:** Metaheuristics, combinatorial optimization, diversification., intensification

#### 5 Machine learning in automated text categorization



Fabrizio Sebastiani

March 2002 **ACM Computing Surveys (CSUR)**, Volume 34 Issue 1

**Publisher:** ACM Press

Full text available: pdf(524.41 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The automated categorization (or classification) of texts into predefined categories has witnessed a booming interest in the last 10 years, due to the increased availability of documents in digital form and the ensuing need to organize them. In the research community the dominant approach to this problem is based on machine learning techniques: a general inductive process automatically builds a classifier by learning, from a set of preclassified documents, the characteristics of the categories. ...

**Keywords:** Machine learning, text categorization, text classification

#### 6 Level set and PDE methods for computer graphics



David Breen, Ron Fedkiw, Ken Museth, Stanley Osher, Guillermo Sapiro, Ross Whitaker  
August 2004 **ACM SIGGRAPH 2004 Course Notes SIGGRAPH '04**

**Publisher:** ACM Press

Full text available: pdf(17.07 MB)

Additional Information: [full citation](#), [abstract](#), [citations](#)

Level set methods, an important class of partial differential equation (PDE) methods, define dynamic surfaces implicitly as the level set (iso-surface) of a sampled, evolving nD function. The course begins with preparatory material that introduces the concept of using partial differential equations to solve problems in computer graphics, geometric modeling and computer vision. This will include the structure and behavior of several different types of differential equations, e.g. the level set eq ...

#### 7 Concepts and paradigms of object-oriented programming



Peter Wegner

August 1990 **ACM SIGPLAN OOPS Messenger**, Volume 1 Issue 1

**Publisher:** ACM Press

Full text available: pdf(5.52 MB)

Additional Information: [full citation](#), [abstract](#), [citations](#), [index terms](#)

We address the following questions for object-oriented programming: *What is it? What are*

*its goals?What are its origins?What are its paradigms?What are its design alternatives?What are its models of concurrency?What are its formal computational models?What comes after object-oriented programming?*Starting from software engineering goals, we examine the origins and paradigms of object-oriented programming, explore its language design alternativ ...

8 Interactive Editing Systems: Part II



Norman Meyrowitz, Andries van Dam

September 1982 **ACM Computing Surveys (CSUR)**, Volume 14 Issue 3

**Publisher:** ACM Press

Full text available: pdf(9.17 MB) Additional Information: [full citation](#), [references](#), [citings](#), [index terms](#)

9 A Stochastic Algorithm for Feature Selection in Pattern Recognition

Sébastien Gadat, Laurent Younes

May 2007 **The Journal of Machine Learning Research**, Volume 8

**Publisher:** MIT Press

Full text available: pdf(484.46 KB) Additional Information: [full citation](#), [abstract](#)

We introduce a new model addressing feature selection from a large dictionary of variables that can be computed from a signal or an image. Features are extracted according to an efficiency criterion, on the basis of specified classification or recognition tasks. This is done by estimating a probability distribution  $P$  on the complete dictionary, which distributes its mass over the more efficient, or informative, components. We implement a stochastic gradient descent algorithm, using the ...

10 Conception, evolution, and application of functional programming languages



Paul Hudak

September 1989 **ACM Computing Surveys (CSUR)**, Volume 21 Issue 3

**Publisher:** ACM Press

Full text available: pdf(5.19 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citings](#), [index terms](#), [review](#)

The foundations of functional programming languages are examined from both historical and technical perspectives. Their evolution is traced through several critical periods: early work on lambda calculus and combinatory calculus, Lisp, Iswim, FP, ML, and modern functional languages such as Miranda<sup>1</sup> and Haskell. The fundamental premises on which the functional programming methodology stands are critically analyzed with respect to philosophical, theoretical, and pragmatic concerns. ...

11 Multiclass Cancer Classification Using Semisupervised Ellipsoid ARTMAP and Particle Swarm Optimization with Gene Expression Data

Rui Xu, Georgios C. Anagnostopoulos, Donald C. Wunsch

January 2007 **IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB)**, Volume 4 Issue 1

**Publisher:** IEEE Computer Society Press

Full text available: pdf(3.70 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

It is crucial for cancer diagnosis and treatment to accurately identify the site of origin of a tumor. With the emergence and rapid advancement of DNA microarray technologies, constructing gene expression profiles for different cancer types has already become a promising means for cancer classification. In addition to research on binary classification such as normal versus tumor samples, which attracts numerous efforts from a variety of disciplines, the discrimination of multiple tumor types is ...

**Keywords:** Cancer classification, gene expression profile, semisupervised ellipsoid ARTMAP, particle swarm optimization.

12 The evolution of Lua



Roberto Ierusalimschy, Luiz Henrique de Figueiredo, Waldemar Celes

June 2007 **Proceedings of the third ACM SIGPLAN conference on History of programming languages HOPL III**

**Publisher:** ACM Press

Full text available: pdf(359.58 KB) Additional Information: [full citation](#), [appendices and supplements](#), [abstract](#), [references](#), [index terms](#)

We report on the birth and evolution of Lua and discuss how it moved from a simple configuration language to a versatile, widely used language that supports extensible semantics, anonymous functions, full lexical scoping, proper tail calls, and coroutines.

13 Algorithms on Stings, Trees, and Sequences: Computer Science and Computational



Biology

Dan Gusfield

December 1997 **ACM SIGACT News**, Volume 28 Issue 4

**Publisher:** ACM Press

Full text available: pdf(1.20 MB) Additional Information: [full citation](#)

14 Program Transformation Systems



H. Partsch, R. Steinbrüggen

September 1983 **ACM Computing Surveys (CSUR)**, Volume 15 Issue 3

**Publisher:** ACM Press

Full text available: pdf(3.00 MB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

15 Contributed articles on online, interactive, and anytime data mining: Mining data streams under block evolution



Venkatesh Ganti, Johannes Gehrke, Raghu Ramakrishnan

January 2002 **ACM SIGKDD Explorations Newsletter**, Volume 3 Issue 2

**Publisher:** ACM Press

Full text available: pdf(1.10 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

In this paper we survey recent work on incremental data mining model maintenance and change detection under *block evolution*. In block evolution, a dataset is updated periodically through insertions and deletions of *blocks* of records at a time. We describe two techniques: (1) We describe a generic algorithm for model maintenance that takes any traditional incremental data mining model maintenance algorithm and transforms it into an algorithm that allows restrictions on a temporal su ...

16 Search-based software engineering: papers: Evolutionary unit testing of object-oriented software using strongly-typed genetic programming



Stefan Wappler, Joachim Wegener

July 2006 **Proceedings of the 8th annual conference on Genetic and evolutionary computation GECCO '06**

**Publisher:** ACM Press

Full text available:  pdf(237.86 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Evolutionary algorithms have successfully been applied to software testing. Not only approaches that search for numeric test data for procedural test objects have been investigated, but also techniques for automatically generating test programs that represent object-oriented unit test cases. Compared to numeric test data, test programs optimized for object-oriented unit testing are more complex. Method call sequences that realize interesting test scenarios must be evolved. An arbitrary method ca ...

**Keywords:** automated test case generation, evolutionary testing, object-orientation, strongly-typed genetic programming

17 Genetic programming: papers: Evolving controllers for simulated car racing using object oriented genetic programming



Alexandros Agapitos, Julian Togelius, Simon Mark Lucas

July 2007 **Proceedings of the 9th annual conference on Genetic and evolutionary computation GECCO '07**

**Publisher:** ACM Press

Full text available:  pdf(447.60 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Several different controller representations are compared on a non-trivial problem in simulated car racing, with respect to learning speed and final fitness. The controller representations are based either on Neural Networks or Genetic Programming, and also differ in regards to whether they allow for stateful controllers or just reactive ones. Evolved GP trees are analysed, and attempts are made at explaining the performance differences observed.

**Keywords:** evolutionary computer games, evolutionary robotics, genetic programming, homologous uniform crossover, neural networks, object-oriented, subtree macro-mutation


18 Real world applications: Evolving computer intrusion scripts for vulnerability assessment and log analysis



Julien Budynek, Eric Bonabeau, Ben Shargel

June 2005 **Proceedings of the 2005 conference on Genetic and evolutionary computation GECCO '05**

**Publisher:** ACM Press

Full text available:  pdf(456.56 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Evolutionary computation is used to construct undetectable computer attack scripts. Using a simulated operating system, we show that scripts can be evolved to cover their tracks and become difficult to detect from log file analysis.

**Keywords:** agent-based model, hacker, log analysis, script kiddies, vulnerability assessment


19 Selected IR-related dissertation abstracts



Susanne M. Humphrey

September 1989 **ACM SIGIR Forum**, Volume 24 Issue 1-2

**Publisher:** ACM Press

Full text available:  pdf(3.70 MB) Additional Information: [full citation](#)

20 A history of Haskell: being lazy with class



Paul Hudak, John Hughes, Simon Peyton Jones, Philip Wadler

June 2007 **Proceedings of the third ACM SIGPLAN conference on History of programming languages HOPL III**

**Publisher:** ACM Press

Full text available: [pdf\(1.15 MB\)](#)

Additional Information: [full citation](#), [appendices and supplements](#),  
[abstract](#), [references](#), [index terms](#)

This paper describes the history of Haskell, including its genesis and principles, technical contributions, implementations and tools, and applications and impact.

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